



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,741	03/24/2004	Craig Andrew Campbell	G00339/US	5861

35758 7590 03/17/2006

GKN DRIVELINE NORTH AMERICA, INC
3300 UNIVERSITY DRIVE
AUBURN HILLS, MI 48326

EXAMINER

BINDA, GREGORY JOHN

ART UNIT PAPER NUMBER

3679

DATE MAILED: 03/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/808,741	CAMPBELL, CRAIG ANDREW	
	Examiner	Art Unit	
	Greg Binda	3679	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 16-21 is/are pending in the application.
- 4a) Of the above claim(s) 2 and 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-6,9-14,16,17 and 19-21 is/are rejected.
- 7) ☐ Claim(s) 7,8 and 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 February 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/14/06</u> | 6) <input type="checkbox"/> Other: _____ |

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Election/Restrictions

2. Claims 2 & 9 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant elected Species I (shown in Figs. 1-6) and traversed the restriction (election) requirement in the reply filed on October 7, 2005.

Drawings

3. The replacement drawings filed Feb 14, 2006 are objected to because in Fig. 2 the cardboard layer 26 is drawn, due to its cross hatch pattern, so that it appears to be made of an elastomer, not cardboard. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet"

Art Unit: 3679

pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. Claims 4 & 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claims 4 & 20 recite that the liner is “removable” from the shaft. However, the specification expressly teaches (see page 8, lines 18 & 19) that the liner is bonded to the shaft. Bonded joints as per Shigley, are typically permanent (i.e. non-removable). As such there is no enabling disclosure providing for a removable connection between the shaft and liner.

Claim Rejections - 35 USC § 102

5. Claims 1, 3-6, 10-14, 16, 17, 19 & 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Nash et al, US 2,748,830 (Nash). Figs. 1 & 4 show a rotary shaft **P** which can be used in a driveline of a motor vehicle (see also “a wide variety of engineering applications” in col. 1, line 38), the shaft comprising: a liner including a cardboard layer **t** (see also col. 2, line 15) and a ceramic layer **x, y, z** (see also col. 4, line 41) wherein the liner is selectively coupled to the inside surface of the shaft to absorb vibration energy of the rotary shaft and increase the resonant frequency of bending of the shaft.

6. Claims 1, 3, 4, 6, 10, 11, 13 & 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Evans et al, US 4,135,553 (Evans). Figs. 1-6 show a rotary shaft which can be used in a driveline of a motor vehicle, the shaft comprising: a liner including a cardboard layer 2 (see also col. 5, line 44) and a ceramic layer 1 (see also col. 3, line 18) wherein the liner is selectively coupled to a portion of a shaft 3 to absorb vibration energy of the rotary shaft and increase the resonant frequency of bending of the shaft.

7. Claims 11-14, 16 & 19-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Bothwell, US 4,059,712

- a. Claims 11-14 & 19. Figs. 4-6 show a shaft for use in a motor vehicle (see “automobile” in col. 2, line 66) comprising: a tube section 10; and a liner 12 having a heat resistant layer (wires 24 & 26 and the air gap disclosed at col. 9, lines 21 & 67+) and a ceramic layer 16, wherein the liner is coupled to the surface of the tube section 10, the liner increases the resonant frequency of the shaft.
- b. Claim 16. Fig. 6 shows the liner further comprises a substrate 14 coated with a ceramic 16. See also col. 9, lines 15 & 16.
- c. Claim 20. Since Bothwell never discloses the liner 12 as being non-removable, it therefore can be removable, at least according to applicant’s line of reasoning. See the remarks at page 12 in regard to claims 4 and 20, in the amendment filed Feb 14, 2006.
- d. Claim 21. In col. 10, line 50, the tube section is disclosed as being made of steel.

Allowable Subject Matter

8. Claims 7, 8 & 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

9. Applicant's arguments filed Feb. 14, 2006 have been fully considered but they are not persuasive.

- a. In regard to item 3, applicant argues that since the specification teaches "any known bonding technique", it enables a liner that is removable. However, there is no disclosure that the liner be removable nor is there any disclosure of a "known bonding technique" that provides a removable bond. Applicant has not even identified in his arguments a specific such bonding technique.
- b. Applicant argues that Bothwell fails to anticipate the claims because Bothwell makes no mention of absorbing energy. However, Bothwell shows a shaft comprising every structural limitation recited in the claims. So therefore it, like the shaft in the claims, must be capable of absorbing vibration energy. If it does not, then the shaft recited in the claims must also be lacking the structure necessary to absorb vibration energy.
- c. Applicant argues that Bothwell fails to anticipate claim 11, because claim 11 allegedly recites, "a ceramic liner having a heat resistant layer". However, claim 11 actually recites "a liner having a heat resistant layer and a ceramic layer" which is clearly anticipated by Bothwell as noted in detail at item 7a above.


Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In Fig. 11, Blumke shows a shaft provided with a cardboard/heat resistant liner 126 in order to absorb vibration energy and noise (see also col. 7, lines 46-63). Shigley discloses bonded joints that are commonly known in the art.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Binda whose telephone number is (571) 272-7077. The examiner can normally be reached on M-F 9:30 am to 7:00 pm with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (571) 272-7087. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Greg Binda
Primary Examiner
Art Unit 3679